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Towards a framework of enterprise information system conflicts

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Abstract

Conflicts are an inherent part of organizational life and managers deal with confrontations and conflicts on an almost daily basis. EIS implementations are a type of change that often leads to open or hidden conflicts. Managers and others involved can only deal with such conflicts effectively if they understand the nature and causes of enterprise information system conflicts (EIS conflicts). To contribute to such an understanding, this study focuses on the analysis of EIS conflicts. In so doing, it aims to identify various types of IS conflicts and to develop a framework that can be helpful in assessing these conflicts. To this end, we have conducted a meta-ethnographic study – that is, we synthesized earlier case studies in which EIS conflicts are described. We purposefully selected eleven qualitative descriptions of EIS conflicts and we analyzed the topics, contexts, and processes of these conflicts. Based on this analysis, we propose a two-dimensional framework of EIS conflicts that leads to a categorization involving four EIS conflict types: task, implementation process, structure, and value conflicts. Based on the conflicts that were studied, this paper also reveals that, in reality, many EIS conflicts have a hybrid form and develop from one type to another over time.

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Keywords: EIS implementation, Conflict, Conflict types, Resistance, Meta-ethnography

1. Introduction

Empirical research [20, 23, 27], theoretical arguments [41], and anecdotal evidence all support the view that conflicts are a pervasive phenomenon during the design and implementation of enterprise information system s (IS). During EIS projects, multiple participants with different goals interact under uncertain conditions which can easily lead to confrontations, maybe about the inclusion or exclusion of certain stakeholders during the project, the introduction of new and unfamiliar working processes, or unwelcome structural, political, or cultural changes.

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Despite this, in many situations, IS project managers demonstrate a low degree of 'conflict awareness'. EIS project proposals are frequently presented from an implicit 'unitarist view' of organizations [38]. Within this view, organizations are perceived to be essentially harmonious, with conflicts both unlikely and undesirable. Moreover, recent studies in the IS field indicate that EIS implementation plans are often based on rational and technical considerations. As such, the new EIS is often heralded as innovative and beneficial for the company, and therefore as progress for all involved. For this reason, design and implementation plans often follow a logical and linear approach [44] and reflect a lack of awareness of conflicting characteristics of the IS. One possible explanation for this lack of awareness is that in both the IS literature and IS curricula relatively little attention is explicitly paid to EIS conflicts, leading to a situation where implementers are not trained in the identification and management of EIS conflicts [4].

Although conflicts are an inherent part of organizational life, and research on conflicts in organizations is acknowledged and studied in many fields including psychology, sociology, organizational behavior, and marketing [4], the IS literature on conflicts is fairly limited. The work of Liu et al. [27], Meissonier and Houzé [30], and a few others are the exceptions. The IS literature on power [18, 40] and resistance [23] associated with EIS projects has produced a considerable understanding of the politics surrounding EIS but, to our knowledge, there is no systematic perspective on conflicts related to EIS projects. This paper aims to take a first step in addressing that challenge by examining and categorizing such conflicts. In so doing we seek to promote a theoretical understanding while also helping practitioners to recognize EIS conflict types in the belief that such an understanding will contribute to more competent conflict management. Consequently, this paper addresses two research questions: (1) what are the topics, processes, and contexts of EIS conflicts; and (2) how can EIS conflict types be categorized in an EIS conflict framework. Insights into the answers to these two questions will be derived by following a meta-ethnographic approach [34] in examining eleven descriptions of EIS conflicts.

To establish a basis for the proposed framework, the theoretical backgrounds to our study are first outlined. Based on these backgrounds, an initial perspective on EIS conflicts is presented. Following this, the research methods are explained, followed by an analysis of the EIS conflicts in our sample. Based on this analysis, an EIS conflict framework is proposed and discussed. This framework can be used by implementers to understand and diagnose EIS conflicts and then develop a conflict management approach that fits with the conflict in its context. The paper concludes by acknowledging the limitations of the study, assessing the usefulness of the framework, and suggesting avenues for future research.

2. Theoretical background

In this paper, we follow Thomas's definition of conflict as: '*a process which begins when one party perceives that another has frustrated, or is about to frustrate, some concern of his'* [41, p 265]. During this conflict process, some form of interaction between parties takes place, and so conflict can be seen as a relational construct that arises when parties feel that they are motivated and able to take action. A conflict assumes interfering goals or a disagreement in terms of interests, values, or power. In other words, conflicts involve a perception of incompatibility among concerns, and this often creates negative emotions. As such, conflicts involve contextual (interdependence), cognitive (disagreement), behavioral (interference), and affective (negative emotion) elements [4, 197-198].

An IS conflict is one that is related to the introduction or use of an enterprise information system that is perceived as inappropriate and as a threat to tasks, competencies, processes, values, and power relationships of individuals, groups, or organizations. EIS conflicts are associated with resisting behaviors which express reservations in the face of pressure from change supporters seeking to alter the status quo by implementing an enterprise information system and related organizational changes [46, 11, 24, 30].

The idea of EIS conflicts is consistent with a political perspective on information systems [29] and inconsistent with a rational view. Within a rational view, participants harmoniously cooperate to achieve the enterprise information system 's objectives that parties have agreed upon [38]. Rationalists articulate information systems in relation to efficiency and rationality concepts. They perceive the development of information systems as a natural sequence of events through initiation, design, implementation, and use. Within the political view, participants all have their own goals, and use the organization as a means to achieve those goals. Starting with this idea, proponents of a political view argue that information systems are in various ways related to the social and political processes that exist within organizations [15]. They believe that information systems can affect the balance of power between

actors, and may lead to competition among stakeholders surrounding the implementation [18]. Consequently, attention to process and contextual aspects of an EIS implementation is often promoted. Proponents of a political persuasion consider EIS conflicts to be a natural consequence of introducing information systems [14].

In line with the rational versus political perspectives on organizations, researchers disagree about the functionality, or not, of EIS conflicts and the optimal styles of conflict management. Among others, Barki and Hartwick [4] and Liu et al., [27] argue that EIS conflicts are a negative phenomenon and that managers should be active preventers and resolvers of conflict. Contrary to this view, Tjosvold [42] argues that conflicts are healthy signals of growth, development, diversity, and unity. Meissonier and Houzé [30] concur and argue that latent conflicts present during EIS development should be made explicit. Their view is that a passive management style stimulates team members to more effectively cope with conflict situations. Others take a more neutral stance [2, 31]. Clearly, EIS conflicts can be a natural part of almost any change process in organizations that result in threats and disagreements about the change involved. As such, EIS conflicts can be functional when they contribute to signaling problems or unintended effects. Such a signal can lead to a better system. However, EIS conflicts can also be dysfunctional when they lead to disruption, stagnation, and lengthy disputes during the design and implementation process. In this study, we take a neutral stance towards EIS conflicts and assume that the functionality depends on the type of EIS conflict and on how it is managed [24].

Conflicts are often divided into cognitive and affective types [20, 35, 30]. With a cognitive EIS conflict, the disagreement focuses on the 'hard' part such as the system, its goals, related tasks and processes, and its effects on structural issues. Affective EIS conflicts on the other hand have a more psychological basis and are relational in nature. They are related to system threats perceived by some actors. These threats can be feelings of exclusion and loss during the implementation process or the perception that the system conflicts with the status quo, cultural principles, social relations, or values [31]. Some EIS conflicts will be primarily cognitive or affective, while others simultaneously have both cognitive and affective elements.

Only a few studies have examined EIS conflicts and their management. Barki and Hartwick [4] focus only on *interpersonal* conflicts during EIS development and do not consider groups or organizations. Further, they follow a static and retrospective variance approach while it would be more appropriate to view conflicts as a process [41, 36]. Further, they do not consider how a conflict evolved or how implementers could address conflicts. Liu et al. [27] examine the relationship between conflict and outcomes in terms of process, product, and project using the expressions 'good' and 'bad'. They also follow a quantitative variance approach. Meissonier and Houzé [30] focus in their 'IT Conflict-Resistance Theory' on how resistance and conflicts emerge and evolve during the previous stages of an EIS project, the so-called pre-implementation phase. In their action research paper, they conclude that conflicts are productive and that an avoidance style of management is appropriate.

Starting from the ideas addressed above, there is an apparent need for further explanation and understanding of the different types of EIS conflict. Such an understanding can be helpful in addressing potential actions that constructively deal with EIS conflicts. It is quite possible that the effectiveness of an EIS conflict intervention depends on the type of conflict. Based on our review of the literature, we believe that EIS conflicts can best be understood by viewing them as a process in a particular context. On this basis, a tentative framework was developed in order to study EIS conflicts in greater depth. Here, we focus on the topic and causes of a conflict against a background of the conflict process and its context.

The topic of the EIS conflict addresses the reason for the interference. The conflict topic can be related to the impact of the system on work, business processes, organizational structure, or strategy. The conflict topic can also be related to the implementation process, such as when actors feel frustrated about their exclusion or their limited influence. Finally, the conflict topic could be related to a perceived negative impact on organizational norms and values. In this study we will identify the primary cause of a conflict, and treat the main concerns of the actors involved and their perceptions of possible negative consequences as the main attributes of the EIS conflict topic.

The process of the EIS conflict reflects how the conflict emerges and evolves, and how it is managed. Conflicts evolve over time, justifying the choice of a process analysis over a static analysis [14, 20, p 239]. Wall and Callister [47] view a conflict as a cycle with causes and topics, a core conflict process and effects that feed back to the causes. Throughout the conflict process, the topic of the conflict may change, perhaps from a task conflict to a relational conflict. Part of the conflict process may involve conflict management [4]. Most authors seem to agree that managers and implementers should anticipate potential conflicts that could affect a project. Thomas's model [41] has attracted

considerable attention. Thomas identifies five conflict management styles: collaboration, competition, accommodation, avoidance, and compromise. He argues that conflict managers can optimize the welfare of one party (a partisan choice), both parties (a joint welfare choice), or the larger system of which the parties are members (a systemic choice). With regard to EIS implementation, Lapointe and Rivard [24] consider four possible conflict-handling modes: 1) inaction, 2) acknowledgment, 3) dissuasion, and 4) rectification through negotiation or mediation. Rectification can involve system adaptation (topic), organizational adaptation (context), or process adaptation (implementation process). In this study, an EIS conflict process is described in terms of its duration, intensity, behaviors, conflict management activities, and conflict outcomes.

The context of an EIS *conflict* describes the social, political, and institutional context in which an EIS conflict arises. This context can be on the interpersonal, intergroup, and inter-organizational levels. An interpersonal EIS conflict for instance occurs when two individuals within a department confront each other over the functionality of a contract system [22], 1992). Ahn and Skudlark, [1] describe an intergroup EIS conflict when they address a situation in which two business units strongly disagree over a telecommunications services system. An example of an inter-organizational EIS conflict is where two hospitals disagree over the system being introduced to share patients' medical data[6]. In this research, we use this contextual dimension to characterize the organization and its environment and the key actors surrounding the conflict.

3. Research design and method

Since this study's objective is to identify the causes of and responses to EIS conflicts in order to identify EIS conflict types, an in-depth perspective, as is offered by the case-study approach, is appropriate. To meet the objectives, a multiple-case study design is needed in order to be able to compare the various EIS conflicts, to identify common patterns, and to categorize them in groups. It is difficult however to identify and study fresh conflict cases although there are many well-documented cases that describe EIS conflicts. Given this situation, we adopted a meta-ethnography research strategy [34]. This approach is relatively new in the field of EIS although meta-ethnography is widely applied in other fields including education studies [16] and healthcare [8, 9].

A meta-ethnographic study follows three stages consisting of systematic selection, analysis, and synthesis of recorded case studies [34, 16].

1) Selection - In this study, the unit of analysis is an EIS conflict, which is considered to start when a conflict is identified and end when some sort of closure or solution is achieved. Here, the cases selected come from scholarly articles in peer-reviewed journals. We also consulted with other IS scholars to see if they knew of published case descriptions we might have missed. This selection process led to an inventory of potential case studies from which eleven were purposively selected. The selection process was organized based on specific inclusion and exclusion criteria. Cases were possible contenders provided they reported: 1) an instance of an EIS conflict; 2) evidence of the nature of the EIS conflict; and 3) a rich description of events and the perceptions of key stakeholders. Cases which met these inclusion criteria were however discarded when: 1) it was impossible to identify the causes and backgrounds of the conflict; 2) the conflict did not take place in an inter-organizational context; and 3) the methods used for data collection and analysis were not rigorous or explicitly described. The selected cases (see Table 1) vary in terms of industrial sector, country, conflict origin, and conflict type. Noblit and Hare [34] encourage meta-ethnographers not to avoid differences but rather to view these as valuable in terms of maximizing variation sampling.

Table 1. Overview of included cases.

Study	Country/region	Organization	System
Case 1) Van Akkeren & Rowlands, [43]	Australia	Large geographically dispersed radiology practice	Enterprise wide IS
Case 2) Jensen & Aanestad [21]	Denmark	Medium-sized hospital	Electronic patient record
Case 3) Markus [28]	USA	Large geographically dispersed radiology practice	Financial information system
Case 4) Knights & Murray [22]	UK	Medium-sized mutual life office	Core contract system
Case 5) Ahn & Skudlark [1]	USA	Telecommunication services provider	Telecommunication services IS
Case 6) Boonstra [5]	Europe	Dairy products multinational	Enterprise resource planning system
Case 7) Chu & Smithon [10]	Europe	Major automotive manufacturer	e-business applications
Case 8) Doolin [15]	New Zealand	Major hospital	Performance measurement system
Case 9) Lapointe & Rivard [23]	Canada	Acute care hospital	Electronic medical record
Case 10) Levine & Rossmoore [26]	USA	Large financial transactions	Process management system
Case 11) Meyer & Young [33]	New Zealand	Mental health enterprise	IS for cost and output information

The regions and countries vary, with cases from North America, Europe, and Australia/Pacific. Different types of stakeholders were involved in the conflicts of the selected cases, such as doctors, accountants, executive managers, division managers, IS departments, and consultants.

2) Analysis - The second stage of a meta-ethnography process is the analysis. Each of the selected studies was independently reviewed by two experienced business researchers and their level of agreement determined. They approached the selected cases with the following descriptive and analytical questions that were derived from the initial perspective on EIS implementation process conflicts:

IS conflict topic: What was the system's aim? What was the initial cause of the EIS conflict? What were the related structural, cultural, or political issues? What were the concerns, interests, and positions of the key actors?

IS conflict process: How did the EIS implementation process conflict evolve? How was the EIS implementation process conflict managed and what was the outcome?

IS conflict context: What were the organizational and external contexts of the EIS conflict? Who were the key actors involved in the EIS conflict?

Answers to these questions were derived from the case descriptions. Each case analysis can thus be seen as a new interpretation through the lens of the tentative EIS conflict framework.

3) Synthesis – The final stage of the meta-ethnographic process is synthesis. This is the interpretation of the collection of studies as this relates to the meta-ethnographical research question. The key difference between analysis and synthesis is the change in perspective from viewing the cases as parts of a collection to viewing the collection as a whole. In this process we synthesized the EIS conflicts in terms of the four main themes that emerged from the analysis of the eleven EIS conflicts.

4. EIS conflicts: topics, processes and contexts

IS conflict topics

Most of the analyzed conflict-causing enterprise information system s that commonly contribute to EIS conflicts share one or more of the following four characteristics:

1) EIS conflicts arise from mandatory systems [7]. This is not surprising since mandatory systems force users into new prescribed behaviors. Such systems create dependency and may negatively affect autonomy. In comparison, when systems are voluntary, they tend to support users and enable discretion. Therefore, EIS conflicts are less likely with voluntary systems.

2) EIS conflicts arise from systems that transcend units, departments, or organizations and establish horizontal or vertical links. Systems that cross borders force actors to provide, collect, share, interpret, and use information. The likelihood that this causes functional, cultural, or political conflicts is greater than with local, internal, systems.

3) EIS conflicts arise from systems that aim to standardize, enforce discipline, and monitor. Systems that facilitate managers in controlling their organizations or units can cause conflicts because this may threaten appreciated autonomy and self-control by workers and others.

4) EIS conflicts arise from systems that are initiated because of pressure from external or distant bodies, for instance from government agencies or headquarters.

However, the analyzed cases also demonstrate that the conflict topics that emanate from the identified enterprise information system s can be diverse and multidimensional. We identified a main concern plus various topics that are often inter-related. For example, when users are dissatisfied with the tasks and functions of a system, they also tend to disagree with the implementation practices. Once we had identified conflict topics, we categorized them under four categories of EIS conflicts: 1) EIS implementation process conflicts; 2) EIS task conflicts; 3) EIS structural conflicts; and 4) EIS value conflicts.

EIS implementation process conflicts amount to disagreements about the process of system design and implementation. Examples found included a lack of training (case 1), lack of consultation (case 4), little attention to relationship building (case 7), and the perception that the system was 'pushed down the throat' (case 9). EIS task conflicts are disagreements about the immediate consequences of the system on work and related business processes. Examples found were 'technical problems' (case 1), 'difficult to use' (case #1), 'unequal division of economic advantages' (case 5), and 'detrimental effects on internal processes' (case #6). Disagreements about the effects of the system on the organizational structure, including control mechanisms and power redistribution, are viewed as EIS structural conflicts. Instances included 'greater control of work practices' (case 2), 'losing control, a shift in power' (case 5), and 'domination of one business unit's working processes at the expense of those of the other business units' (case 6). EIS value conflicts are seen as disagreements about the effects of the system on shared beliefs, values, and the culture of stakeholders. Examples found were 'new system conflicted with the customer-focused culture of two business units' (case 6), 'threat to the status of health professionals' (case 9), and 'system caused culture of distrust, suspicion, and secrecy among functional groups' (case 10).

Conflict processes

In terms of the processes, we identified duration of the conflict, conflict intensity, conflict behaviors, conflict management, and the outcome of the conflict. The duration of the studied EIS implementation process conflicts varied from relatively short periods (case 2) to several years (case 3). EIS conflicts also vary in intensity and can remain as latent conflicts (as in case 2) or develop to severe crises and even 'war-like' situations, such as in case 9. The conflict intensity is reflected in the so-called conflict behaviors, which can develop from complaining (case 3), through criticism (case 8), rejection of use (case 5), resignation (case 9), to sabotage (case 11). In many instances, managers take action during EIS conflicts. Our analysis revealed various conflict management behaviors including job rotation (case 3), compromise (case 4 and 6), system abandonment (case 7), and downplaying (case 11).

Contexts of EIS conflicts

Table 1 gives an indication of how the nature of the selected enterprise information system s varied. The systems included financial enterprise information system s, electronic patient records, CRM, ERP, and various types of performance measurement systems. EIS conflicts in the implementation process took place on various organizational levels. Many EIS conflicts occurred between two units, such as the vertical inter-unit conflicts between senior management and business units (cases 3 and 5). EIS conflicts were also found between organizations (inter-organizational conflicts, case 7) and between individuals (inter-personal EIS conflicts, as in case 11). Many EIS conflicts have multilevel characteristics: they may start at the inter-personal level, maybe between the head of EIS and a business unit manager, but can develop into an inter-organizational conflict (as in case 4).

5. EIS conflict framework

We have categorized the various EIS conflicts by developing an EIS conflict framework. This framework uses two dimensions to categorize EIS conflict topics and is based on theoretical concepts as well on the case studies outlined above. The first dimension, the impact of the conflict, has already been discussed in the background section and distinguishes between cognitive and affective EIS conflicts. The second dimension, the reach of the EIS conflict, categorizes EIS conflicts in terms of direct versus wider organizational consequences. Direct consequences of an EIS conflict are ones that relate to immediate effects of the system and its implementation. Wider organizational consequences refer to wider and deeper consequences, such as conflicts over structure, control, autonomy, and

culture. Establishing these two dimensions results in four archetypical EIS conflict topics: 1) EIS implementation process conflicts, 2) EIS task conflicts, 3) EIS structure conflicts, and 4) EIS value conflicts (Figure 1). We first discuss these four archetypes and related management interventions before moving on to discuss how in practice EIS conflicts are often combinations of these archetypes and how EIS conflict topics may develop and change over time.

1) EIS implementation process conflicts - During an EIS implementation process conflict, at least one party is frustrated about the design and implementation process of an enterprise information system . Parties can especially experience such frustrations when top-down approaches, without consultation or participation (case 1), are adopted. The likelihood of such EIS conflicts can increase when other parties, for example those who are part of a pilot scheme, have more opportunities to influence system design than others (case 6). EIS implementation process conflicts can also arise when participants feel that they are not being taken seriously by implementers. Since participation can be a time-consuming activity, parties can feel frustrated if their participation does not lead to real influence and acceptable outcomes (case 10). The literature on user participation, user involvement, and stakeholder management [29, 6] suggests that parties experience ownership and responsibility for a certain outcome if they have participated actively in the problem definition, and the development and implementation of a solution. If this is not the case, feelings of exclusion, passivity, alienation, and anxiety can arise, and these are expressions of EIS process conflicts. A typical strategy in managing EIS implementation process conflicts is to adapt the implementation process. Implementers can rectify the implementation process and invite parties to participate in the system and also train prospective users [23]. Ownership and shared responsibility for the proposed solution can reduce frustration among parties.

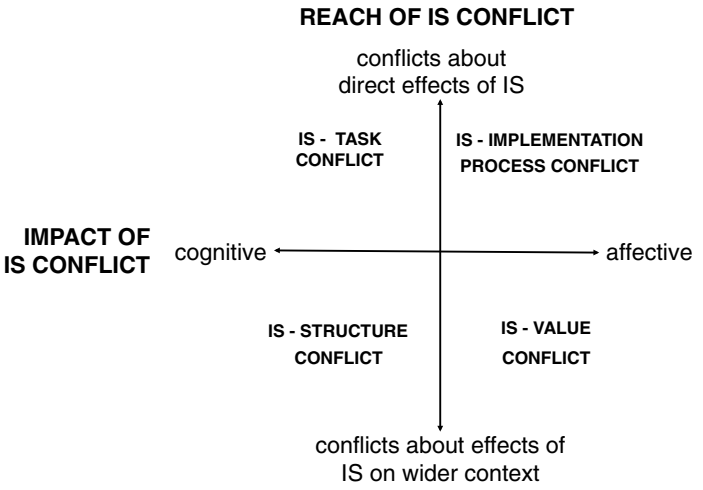

Fig. 1. Information system conflict framework.

2) EIS task conflicts - During an EIS task conflict, parties become frustrated about the immediate consequences of an enterprise information system on their tasks, work processes, work design, or finances. This frustration can be related to technical problems, such as a slow response time or the unavailability of the system (cases 1 and 3). The system can also be difficult to use or reflect unfamiliar working practices, such as in case 6. Certain EIS task conflicts are related to a perceived negative effect on the performance of work or as a distraction from 'the real work' (case 2). This is in line with the technology acceptance literature (Davis, 1989) that highlights the criticality of the system's perceived usefulness and perceived ease of use. Venkatesh et al. (2003) complemented this model with other task-related variables in their UTAUT model, such as performance expectancy and effort expectancy. We have opted to categorize conflicts about the financial consequences of enterprise information system s as task

conflicts because they are directly related to the tasks, roles, and responsibilities of people. In case 5, parties disagreed over the unequal division of the economic value of an enterprise information system. In a number of the EIS conflicts investigated (cases 1, 2, 3, 8, 9, 10, and 11) the immediate motivation for introducing EIS was to control costs or to generate new business, and the users felt that they did not receive a reasonable share of these benefits. In the event of an EIS task conflict, typical behaviors are non-use (cases 3, 5, 8, and 11), using shadow systems (cases 1, 3, 6, and 7), and non-cooperation (cases 5 and 8). EIS task conflicts may also arise when EIS users feel that the system negatively impacts on their work motivation. This amounts to a perceived negative influence on skill variety, task identity, task significance, autonomy, or feedback [32], as was seen in cases 7 and 9. Typical strategies adopted to manage EIS task conflicts include adapting the system to the work processes of its users, resolving the technical problems, and re-allocating the costs and benefits of the system.

3) EIS structure conflicts - In an EIS structure conflict, actors feel frustrated about the effects of an enterprise information system on structures, including on control structures, incentive systems, and power structures. In a number of our cases, we could observe greater domination and control by executive management as an EIS outcome, at the expense of divisions, business units, and operational staff. Markus [29, case 3] provides a not uncommon example of accountants working at headquarters gaining power through a centralized financial enterprise information system at the cost of division-level organizational members. In the situation described by Jensen and Aanestad (21 –case 2], the work practices of surgeons became more tightly controlled by top management. Case 8 [15] is another example of an attempt to scrutinize the work of medical specialists and to make their work visible and susceptible to intervention by management. These examples illustrate that EIS structure conflicts may arise when a system interferes with established organizational practices or institutional logics [12]. This finding is in line with the IS literature on resistance. Antecedents of resistance to enterprise information system s are often related to wider contextual issues than the new system's technical and functional features. For example, Lapointe and Rivard [23, case 9] demonstrate how re-division of power and reorganization can lead to resistance whereas, in another situation, the withdrawal of a module and a relatively relaxed implementation scheme eventually led to supportive use of essentially the same system. Typical behaviors in the event of EIS structure conflicts are the expression of negative attitudes and complaints (as in cases 2 and 4), threats of sabotage (case 11), and a lack of cooperation (e.g. case 5). Possible management strategies in response to EIS structure conflicts are to renegotiate system specifications, allow other systems to be maintained for different units, restructure the organization before the actual system introduction, and offer incentives.

4) EIS value conflicts - During an EIS value conflict, actors feel frustrated over the effects of a system on shared beliefs, values, and culture of stakeholders. There is increasing evidence that enterprise information system s have the potential to affect organizational culture or subcultures. Robey and Boudreau [37] argue that culture can explain the contradictory consequences of implementing similar EIS within different organizations. This EIS in line with the findings of Leidner and Kayworth [25]. They conducted a review of the research on the culture – EIS relationship, including the influence of EIS on culture and found that similar systems can lead to different responses in different organizational cultures. Case 1 illustrates how an enterprise information system affected provincial practices, social networks, and a range of cultural attitudes leading to conflict in the context of a geographically dispersed radiology practice. Case 3 is an illustration of a system that challenged a culture of local autonomy and decentralization in a multidivisional organization. Similarly, case 6 shows how an ERP system was perceived as reflecting a bureaucratic and centralistic culture that conflicted with the flexible, fast, and market-oriented values of two business units. Doolin's study [15, case 8] describes how doctors, trained in a culture of scientific and positivist thinking, came into conflict with a managerial way of thinking that was more open-ended and 'trial and error' based. Typical expressions of EIS value conflict are anger and aggressiveness (case 1, where 'radiologists, at least figuratively, kicked holes in walls', and case 9), cynicism (case 2), and illness and departure of key staff (cases 4 and 9). Conflict management styles seen in the event of EIS value conflicts are the promotion of mutual understanding and job rotation.

IS conflict combinations - Our analysis shows that none of the studied conflicts can be categorized as of one single type. EIS conflicts typically arise when external pressures (such as new government regulations) or strategic motives (such as to become an integrated firm) are translated into new enterprise information system s that are mandatory for its prospective users. These systems are often implemented in a top-down style, which can easily lead to an EIS implementation process conflict. At the same time, these type of systems may be incompatible with people's tasks and work processes, which leads to an EIS task conflict. After some time, parties may notice that the system

increases the monitoring and control capabilities of management, at the expense of local-level discretion, which can lead to an EIS structure conflict. Finally, the system may conflict with users' values, such as when management rationality collides with medical professionalism.

In such situations, EIS conflicts are multidimensional and multilayered. The successful management of multidimensional conflicts requires the unraveling of the various dimensions of the conflict. An intervention may include a contingent combination of the EIS conflict management approaches discussed above. In some situations, such a mix of interventions can be effective and may lead to an effective solution, as demonstrated in cases 5, 6, 8, and in two cases by Lapointe and Rivard [23 – case 9]. If such multilayered conflicts are not adequately addressed, they may lead to continuous tensions and problems (case 3) or to the abandonment of the system (case 7).

IS conflicts evolve and change over time - Typically, EIS conflicts begin as an EIS implementation conflict. If key actors are excluded during the implementation phase, they may become frustrated and criticize this process. The conflict may become more intense when the system is actually implemented, and when parties feel frustrated about a perceived lack of usefulness, incompatibility with work processes, or unequal division of financial benefits. If this situation develops, the EIS implementation process conflict is likely to be followed by a more intensive EIS task conflict. If this EIS task conflict is ignored, more 'indirect' EIS structure conflicts or EIS value conflicts may arise. As such, EIS conflicts can evolve and worsen over time if not addressed in a timely and acceptable manner.

6. Conclusions

Conflict is an important organizational phenomenon and one that is clearly prevalent but under-researched in the IS discipline. Therefore, the main question addressed in this paper has been: what are the topics, processes, and contexts of EIS conflicts, and how can EIS conflicts be categorized in an EIS conflict framework? We have answered this question by analyzing eleven published cases that included rich descriptions of conflicts that arose during the introduction of an EIS system. We have analyzed the context, process, and topics of these conflicts. In characterizing these conflict types in a framework, we proposed four archetypical conflict types that are classified using two underlying dimensions: cognitive versus affective, and direct versus indirect consequences. The resulting archetypical conflicts are: 1) EIS implementation process conflicts, 2) EIS task conflicts, 3) EIS structure conflicts, and 4) EIS value conflicts. This study highlights that the types of EIS conflicts that arise are not based solely on the technical and functional characteristics of the system, but also on the perceptions gained from actual interaction with the new technology in the specific organizational setting. Systems often impose control mechanisms and new roles that are not always welcomed by the intended users. Our analysis demonstrates that EIS topics of conflict in real life can be characterized as combinations of the framework's archetypes, and that the topic may change over time. The path that is followed during the conflict process depends on how the conflict is managed and, for that reason, we propose the development of a contingency model for EIS conflict management.

Existing conflict theories are general in nature and ignore the various types of confrontations that are characteristic during the introduction of enterprise information system s. The same is true of approaches to conflict management. The dominant model seen today, that of Thomas [41], is descriptive in nature and does not take account of the conflict type. Lapointe and Rivard's [24] introduction of conflict handling modes partially fills that gap, but this views system rectification as the only appropriate EIS conflict management style. Here, our study has a number of theoretical implications and suggests that a contingent approach to the management of EIS conflicts is required. EIS conflict management may need to involve adapting and revising system functionalities as well as implementation practices. This study's framework can be used as a starting point for the development of such a contingent approach to conflict management. This research has also demonstrated both the feasibility and the value of conducting meta-ethnographic research based on published EIS cases.

The value of these findings for EIS project managers and others responsible for the implementation of enterprise information system s is that the EIS conflict framework proposed in this study could contribute to recognizing and understanding conflicts that arise during EIS implementations. Such an understanding may help implementers to apply conflict management approaches that suit their particular conflict. We would stress that no conflict management approach is universally applicable, and the nature of a specific conflict may point toward a particular intervention. For example, a conflict in an EIS implementation process may lead to adaptations being made in the

degree of participation and involvement during the introduction of the system. In comparison, in the event of an EIS structure conflict, negotiations among the powerful parties and adaptations to the system might be needed to resolve the conflict.

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